CLINICAL PATHOLOGY AND GENERAL PRACTICE

BY

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One of the most significant medical trends in England today is the movement towards treatment at home of many patients formerly regarded as hospital cases. Treatment by antibiotic, by vitamin or by anticoagulant can be carried out at home by the keen family doctor as efficiently as in hospital in those cases which do not require skilled nursing or 24-hour supervision. The saving of expense to the State is obvious and for this reason the change is part of current policy of the Ministry of Health. How far the tendency will go depends on the progress of research into the cause and cure of degenerative cardiovascular diseases, neoplasms and rheumatism. In future the hospital wards may become increasingly places for investigation and for initiation and stabilization of a treatment régime which can be continued by the family doctor at home. The process of transition with disappearance of hospital beds is seen at present in varying degrees for infectious diseases, venereal diseases and tuberculosis. It need hardly be said that this trend towards domiciliary treatment is welcomed by all who have the welfare of general practice at heart and most by the general practitioner himself. With full access to special departments his status at once becomes that of a scientific physician able to practise the medicine he learned in his teaching hospital.

An essential pre-requisite for the management of cases at home is that full laboratory facilities should be available. Initial diagnosis may then be made with certainty, treatment may be guided by laboratory findings, and the progress of the case followed in an objective way by the use of appropriate laboratory tests. Accurate prognosis and assessment of cure can be placed on a safe footing.

HOW TO USE THE SERVICE

This paper explains how a practitioner can make best use of the services of the laboratory in the day-to-day running of his practice. The service is now fully available in all provincial and most teaching centres, and all that is required, is that the doctor should be able to take specimens and deliver them without delay to the nearest laboratory. Even this small effort is unnecessary with ambulant patients who can attend the laboratory. For them an appointment must be made as certain times are set aside at which practitioners' cases can be seen. Patients arriving at other times may have to wait, or, what is more important, there may be delay in examining specimens with consequent inaccuracy of results. Where the case is not an urgent one, many practitioners find it convenient to complete the laboratory "Request Form" stating on it "Please make appointment" and send it to the laboratory secretary who can then communicate directly with the patient and make an appointment for his attendance. Thus having posted the request form the practitioner need only await the arrival of the report.

Laboratories differ in the arrangements made for general practitioners' work and the first step is to ascertain the name of the nearest or most conveniently situated laboratory and to make personal contact with the pathologist and his staff. Details may then be discussed of times and methods. Outfits for specimen collection may be obtained and hints given which will smooth out any difficulties which may arise. Pathologists often have a wide field of subsidiary laboratories and other hospitals to visit and it is well to make the acquaintance of chief and senior technicians in the various departments. These men are highly expert in all branches of their work and are able

to give practical advice on both technical and theoretical points. They are available at any time during laboratory hours when the medical staff may be inaccessible.

It is very desirable that each practitioner should deal always with the same laboratory even if more than one is conveniently situated. Records are kept of each patient and reference to them by the pathologist making the report may be most helpful in elucidating a problem of diagnosis. To have such records scattered over a number of laboratories is as detrimental to the patient's interests as would be his having two or more family doctors.

The pathological services are already widely used by general practitioners. In Bath, where these services have been freely offered since the appointed day, the proportion of G.P. work is steadily rising and now accounts for 12 per cent of the total. If all general practitioners used it as enthusiastically as the few who co-operate most fully with the laboratory the proportion would be far higher. Work from practitioners is welcomed by all pathologists who find it most interesting. After nearly nine years of the National Health Service the author has never encountered any abuse of this service. The investigations requested are relevant, usually simple and the "specific problem" is usually one in which the laboratory can help. In many cases clues obtained from a simple test can be followed up on the material sent and a definite diagnosis made without further reference to the practitioner. We have rarely found general practitioners employing the regrettable "drag-net" technique in which a mass of unrelated investigations are ordered in the hope that some clue to diagnosis may emerge. As with "drag-nets" elsewhere the most likely finding is an "old boot" in the form of a useless and misleading minor abnormality. Pathological requests should always arise out of the clinical study of the patient and one line of investigation should be exhausted before another is commenced.

SOME PITFALLS

To those who may be unfamiliar with the interpretation of laboratory findings it cannot be too strongly emphasized that *no* diagnosis should be founded on a single pathological result if it is at variance with the overall clinical picture. Examples of this pitfall are legion. Thus a very high "blood urea" may be found in a blood containing Wintrobe's ammonium oxalate mixture as anticoagulant if the common Nesslerization method is used. Alarming blood-sugar values have been found in blood taken with a syringe recently used for injecting glucose solution. Consternation was caused many years ago when a patient in a rheumatic-diseases hospital, who was a pillar of one of the sterner religious sects, was found to have a positive Wassermann reaction. Reviewing his case in the light of recent knowledge, it is almost certain that he had disseminated lupus erythematosus in which a biological false positive Wassermann reaction is a recognized finding, as it is of course in some cases of glandular fever and atypical virus pneumonitis. In all cases of this kind when doubt exists, the test should be repeated and the findings discussed with the pathologist.

Another common source of error arises from not approaching the investigation of a problem case in a systematic way. It is better to begin with a Blood Sedimentation Rate, blood count and urine. The more spectacular tests can come later. It is astonishing how often a rare and puzzling syndrome resolves itself into an attack of simple pyelitis when the urine is examined! Clotted blood was sent for Brucella agglutination test from a farmer with unexplained fever; it was positive, and much valuable time was lost before the case was reinvestigated and found to be one of generalized tuberculosis. The Brucella antibodies were presumably the result of infection previously acquired during his work in handling infected cattle.

The clinician should not expect all laboratory results to agree fully with the classical patterns associated with specific diseases. Many factors modify the findings including especially previous treatment. For this reason a note of treatment given should always be made on the request form if it is likely to modify the laboratory findings in any way. It is common now to find a purulent cerebrospinal fluid to be sterile on culture and

negative blood cultures do not exclude an active infective endocarditis. Carcinoma of the stomach usually increases the B.S.R. but a normal result may be found in scirrhous non-ulcerating cases and also in some cases where the liver is involved. In presence of jaundice or other evidence of liver damage the B.S.R. is suspect. A rapid rate is valid but a normal rate excludes nothing. Many similar examples could be given.

As the old killing diseases are being mastered, others, once rarities, are taking their places. It is necessary, however, to preserve a sense of proportion. Polyarteritis nodosa and disseminated lupus erythematosus are undoubtedly more common than before, but they are not the solution of all diagnostic problems. It is still necessary to base investigation on the assumption that common diseases are more likely to be present and should be excluded first. The residuum of resistant and undiagnosed conditions will include the rarities which tax to the uttermost the resources of haematology, bacteriology, biochemistry, and histology to establish the diagnosis. Such cases should be in hospital.

COLLECTION OF SPECIMENS

Blood collection

Venous blood is necessary for most biochemical tests and is preferable for haematological examination. With practice arm puncture is the most rapid method and the least irksome to the patient. A piece of rubber tubing 18 inches long makes a good tourniquet. A wide-bore needle (No. 19 B.W.G.) is preferable (with short bevel). Needles must be completely sterile and may be obtained autoclaved in glass tubes from the laboratory. In view of the risk of transmitting hepatitis, syringes must be well boiled after use.

An alternative method is to allow the blood to flow, under venous pressure, from the needle through a short length of translucent polythene tubing into the test-tube or bottle in which the specimen is being collected. A double-bored rubber stopper exactly fitting the container has two short lengths of glass tube through it. To one the polythene tube is connected, the other being an air-vent. An autoclaved needle is attached just before use. This method has the following advantages: there is virtually no risk of hepatitis, and it is a "one hand" method. The patient's arm is grasped firmly and the needle inserted until the blood is seen to flow through the polythene tube into the container. The fact that one's grasp of the arm need never be relaxed makes it an ideal method of taking blood from children. Finally it is practically unbreakable and can be easily cleaned under a tap. Complete sterility—except for the needle—is unnecessary.

Screw-cap bottles of the U.G.B. 2-dram vial type or the larger "Universal Container" are now widely used owing to their strength. A plentiful supply, some containing dry anticoagulant and some plain, should be kept at hand. The anticoagulant which we favour is E.D.T.A. (ethylene diamine tetra acetate) or Sequestrene. This is excellent for preserving the blood cells for counts and for reliable B.S.R. determination while the plasma gives excellent results in agglutination tests. It is not suitable for Wassermann Reaction or Khan tests. Most biochemical tests except serum calcium and prothrombin content estimation can be done on E.D.T.A. blood. Serum-calcium estimation requires clotted blood and for prothrombin determination 0·5 ml. of 3·8 per cent. sodium citrate is present in the tube, to which 4·5 ml. of blood are added and shaken. If both clotted and unclotted blood are required and the needle and tube technique is used, blood is taken directly into the plain bottle and part transferred to the anticoagulant bottle which is at once well shaken.

Little need be said about the other specimens such as faeces, urine, exudates and swabs, except to mention the newer transport media, such as Stuart's, in which exudates on swabs may be preserved for considerable periods. It is especially valuable for vaginal swabs because the gonococcus and trichomonas vaginalis remain viable.

For details of lumbar puncture and methods of tapping the serous cavities a larger work such as *Clinical Pathology in General Practice* published by the *British Medical Journal* should be consulted.

COMPLETION OF REQUEST FORMS

There is a tendency to regard these as unnecessary paper-work. No fallacy could be more dangerous. A busy laboratory receives some hundreds of specimens in a day and unless they are carefully labelled (name, initials and date) and accompanied by a fully completed request form, serious and even tragic mistakes may be made. Unlabelled specimens cannot be accepted in blood-transfusion work and in other cases we mark the report "Specimen unlabelled" and no responsibility can be taken for errors of identification. On the request form full Christian names should be given and date of birth is a better identification feature than age alone. The date and time of taking the specimen will show the pathologist what tests are possible and what allowance must be made for deterioration. Space is always provided for clinical details. A long essay on the case is not called for. A few well-chosen words will indicate the duration of illness, the salient clinical features, any tentative diagnosis clinically suggested and any specific treatment given. Thus "3/12 loss of weight, dyspepsia, afebrile? Ca. stomach? Anaemia. Imferon given" provides the pathologist with a background against which he can interpret his findings and possibly suggest or carry out further tests. Without these few words he is working in the dark. The assistance given to the practitioner by a pathological report is often in proportion to the information which he gives the laboratory. Time spent on the request form is well spent.

NOTES ON MORE COMMON METHODS AND APPLICATIONS OF CLINICAL PATHOLOGY

Anaemia

Where the symptoms point to anaemia, leukaemia or other blood disease a vial of at least 3 ml. of well-shaken unclotted blood should be sent together with a dried blood film. The drop of blood in the needle may be used for making this film. For postal specimens the importance of a well-made film cannot be over-emphasized. Every practitioner should secure a supply of microscopic slides and practise until he can make a really good film. This must be quite dry before it is wrapped in paper and enclosed with the bottle. The name may be written in ink over the thick end of the blood film. A well-made film alone can often be far more informative than a bottle of ageing blood.

If the blood shows an iron-deficiency anaemia of low colour index the question of its cause arises. A B.S.R. estimation can be very helpful, a definite increase indicating that there is some underlying disease process such as infection or neoplasm to which anaemia is secondary. A leucocytosis or leucopenia may point to infection, or abnormal white cells to leukaemia. In every case of severe unexplained iron-deficiency anaemia, a faeces specimen should be sent for occult blood test before and after a three-day period on a white diet. Blood loss is by far the commonest cause of this type of anaemia and treatment must be directed to the bleeding point rather than the blood. Follow-up examinations only call for haemoglobin estimation at intervals of 2–4 weeks. Full blood counts are unnecessary when a diagnosis has been established.

If the anaemia is of macrocytic type with high colour index a complete diagnosis cannot be made on peripheral blood examination alone. A test meal is required to determine whether there is achlorhydria and sternal marrow examination is also necessary. For the general practitioner a Diagnex (Squibb) tubeless test meal is able to show whether free hydrochloric acid is present or absent. It involves the oral administration of the contents of two small cachets and the collection of three timed urine samples. Estimation of quinine in the urine indicates whether free acid is present or absent. Full instructions are given with each outfit.

A complete diagnosis requires in addition sternal puncture and a faecal fat balance

test. If it is not possible for the patient to go into hospital and in presence of *typical* clinical and peripheral blood pictures of pernicious anaemia including achlorhydria and normal B.S.R. then many practitioners are satisfied to give a trial dose of Vitamin B_{12} and have the blood examined for a reticulocyte count in 5 to 10 days. If this response is satisfactory, treatment may be continued with confidence. If the anaemia does not respond, full investigation in hospital is necessary, but by then the vitamin given may have modified the marrow picture. So it is clearly best to have the full investigation made before any treatment is given. On no account should the therapeutic test with folic acid be made because in true Addison's anaemia (true P.A.) folic acid precipitates devastating nervous involvement. It is possible but not desirable to carry out sternal puncture as an out-patient procedure. It alarms the nervous patient and preliminary sedation is desirable.

If the clinical, radiological or white-cell pictures point to leukaemia or neoplasm in bone, sternal marrow examination is a *sine qua non*. The practitioner should remember that leukaemia is becoming far more common than in the past and that its clinical presentation is often highly atypical.

Ante-Natal Blood Testing

Blood from every expectant mother should be examined early in pregnancy for three reasons, first to determine whether anaemia is present, secondly to carry out out Wassermann and Kahn tests, thirdly to ascertain the patient's Rhesus (Rh.) blood group. The A B O group is also determined but this is of less importance, for it does not obviate the need for confirmation of the patient's group and a full cross match if the mother requires blood transfusion at a later date. A special form must be completed to accompany each ante-natal specimen because the extent and interpretation of the pathologists' investigation depends on the history of previous pregnancies and blood transfusions. If the patient cannot attend at the laboratory, clotted and Wintrobe-oxalate blood samples (5 ml. of each) are required. Haemolytic disease of the new born complicates 1 in 200 pregnancies and it is essential that the possibility of its existence be determined before labour, and the mother transferred to a hospital where facilities for immediate and repeated exchange transfusion of the baby are available should this prove necessary. Demonstrations of antibodies in maternal serum is the only way of selecting such cases.

If the mother is found to be Rh. negative at the first test, then, if she be a primiparous woman without history of previous blood transfusion, no further test is necessary. A second sample of clotted blood must be sent at the thirty-fourth week from all Rh. negative primiparous women with a history of having received a blood transfusion and from all multiparous Rh. negative mothers. This sample is tested for Rh. antibodies. If they are found the husband's blood should be sent for examination.

If the mother, whether primiparous or multiparous, is found to be Rh. positive, in the absence of a history of blood transfusion or of clinical evidence of haemolytic disease in a previous baby, no further test is necessary. If such a history is present the mother's blood should be retested at the thirty-fourth week for unusual immune antibodies. If they are found the husband's blood should be examined. It should be noted that the husband's blood is only examined when the mother's serum contains antibodies or where there has been a history of unexplained still-birth or a jaundiced baby. In other cases it causes alarm and is not really helpful.

For the diagnosis of haemolytic disease in the new born, 2 to 5 ml. each of oxalated and clotted cord blood should be sent at once to the laboratory where the blood count and haemoglobin may be determined and the red cells examined for evidence of sensitization by antibody.

Blood Sedimentation Test.

Among the simple laboratory procedures, valuable in many difficult cases, the B.S.R.

estimation occupies a unique place. The only cause of physiological increase is pregnancy and a raised rate is otherwise an indication of organic disease. It is not specific for any one disease or group of diseases. It is a reflection of some change in plasma protein constitution, though this change varies from case to case. In acute diseases fibrinogen is often increased while in chronic disease α and γ globulin may be raised. It is sometimes stated that a raised rate indicates infection, but this is not so for Gout, leukaemia and coronary thrombosis are non-infective conditions in which the sedimentation rate is often high. On the other hand in superficial catarrhal infections and in unlocalized systemic infections by bacteria and viruses the rate may be normal or nearly so. The rate may be high in liver disease when there is usually some change in plasma protein. Unclotted blood (oxalate or E.D.T.A.) as used for the blood count is quite suitable for the B.S.R. provided that it arrives at the laboratory within three hours of taking. In view of the value of the test a number of country practitioners remote from the laboratory have found it worth while to acquire a simple rack and a number of Westergren tubes. These are obtainable commercially at all laboratory supply houses.

The procedure is simple. Have at hand a bottle of 3·8 per cent. sodium citrate solution. Fill the pipette to the 150 mm. mark (i.e. one quarter full) with citrate solution and place it in a small test-tube. To this add one pipette full to the O mark with blood from the specimen before it is sent to the laboratory for the count. Blood and citrate are mixed and the pipette is then filled with diluted blood to the mark and placed vertically in the stand. A simple timing device such as used in the kitchen is set to ring after one hour. If the doctor himself cannot be present to read it, the blood level after one hour may be exactly marked by sticking a piece of adhesive paper to the tube, a task which is well within the competence of wife, secretary or even intelligent daily help, after instruction.

The upper limit of normal is 15 mm. in 1 hour. The other extreme is represented by myelomatosis where rates of over 100 mm. in *one half hour* are common.

Suspected Infection, Acute and Chronic

In any patient with a fever of unknown origin the appropriate investigations depend on the differential diagnosis; this of course varies from case to case. Pathological material, sent for bacteriological examination, should include urine in every case, with swabs, faeces, vomitus, sputum, pus or serous effusions where they were available. The initial routine investigation may also include (1) unclotted blood for full blood count, B.S.R. and biochemical tests, (2) clotted blood for serological tests and tests such as the flocculation reactions which are used in hepatitis, and (3) blood culture. The B.S.R. and the leucocyte picture may then suggest a group of infections which may be further investigated by serological tests such as the Paul Bunnell test for glandular fever, cold agglutination or M.G. streptococcus test in primary atypical virus pneumonitis, or the Brucella agglutination tests. In the case of suspected virus and rickettsial infections a specimen of serum secured early in the disease is of great value as it can be compared with a second specimen taken in convalescence. In virus serology such paired specimens are necessary in view of the great differences between individuals in the normal antibody titres. When blood culture is called for there is no substitute for an autoclaved syringe and needle in a sealed container which can be obtained from the laboratory before use. In carrying out the routine described 20 ml. of blood are desirable of which 10 ml. are added to a bottle of broth for culture, 5 ml. mixed with anticoagulant and 5 ml. collected in a plain bottle for serum. The blood in the needle is then used for making a blood film. If malaria is a possible diagnosis a thick smear is also made on the central one-third of a further side and *well dried.*

Urine from female patients must be taken by catheter if the bacteriological examination is important. In a male a mid-stream specimen passed directly into a sterilized bottle is satisfactory.

Renal Diseases

The finding of albuminuria should always call for a complete examination of the urine with microscopic and cultural examination of the deposit. If evidence of renal disease is present a blood urea estimation should be made. Further help may be given if the blood urea is combined with the urea clearance test. For this test two samples of urine are required each representing 60 minutes' renal output. The urine and blood samples are sent to the laboratory and the clearance as a percentage of normal can be calculated. It is essential that the bladder is empty before collection of the timed specimens is commenced and if the time intervals differ from 60 minutes the exact time in minutes should be stated no each bottle. The whole of the timed specimen should be sent because the calculation requires the renal output in ml. per minute. Other tests which may be helpful in chronic disease are serum cholesterol estimation and alkali reserve for which a clotted blood sample collected under a one-half-inch layer of liquid paraffin is required.

In prostatic cases, besides a urine examination valuable information may be given by B.S.R., haemoglobin, blood urea and acid and alkaline phosphatase determinations. They suggest whether or not there is a carcinoma with or without bone secondaries. Five ml. of E.D.T.A. (or potassium oxalate) blood are sufficient for all these tests. By having these tests carried out before the patient sees the surgeon, valuable time may be saved in arriving at a diagnosis and determining suitability for surgery.

Investigation of Glycosuria

The finding of a reducing substance in the urine calls for a blood-sugar estimation. A full glucose tolerance test is not always necessary in the first place. A single "sighting shot" may be all that is required and blood taken two hours after a good carbohydrate containing meal, e.g., breakfast will usually show whether the glycosuria is important. A urine specimen passed at the same time, examined for sugar and acetone, supplements the information given by blood sugar. One has seen a patient sent to the laboratory for glucose tolerance test showing clinical evidence of severe diabetes, in whom the fasting blood sugar was over 600 mg. per cent. In such a patient a dose of 50 g. of glucose would be ill-advised. If the result of the single test is in any way equivocal the full 2-hour glucose tolerance test should be carried out at the laboratory.

Glycosuria in pregnancy is usually physiological when it is due to milk sugar but if any doubt exists a single blood-sugar test as described is far more useful than a urine specimen for osazone or fermentation tests which are tedious to perform and often inconclusive where only a trace of reducing substance is present.

Hepatic Disease

When jaundice is the presenting feature a simple series of tests may be carried out to determine whether it is due to biliary obstruction or to infective hepatitis. Five ml. of clotted blood are required and a urine specimen should also be sent. The estimations used are serum bilirubin and serum alkaline phosphatase with serum colloidal gold, thymol turbidity and thymol flocculation tests.

The presence of bile in the urine will show that the icterus is of hepatic or obstructive origin and not due to haemolysis. In obstructive jaundice the alkaline phosphatase is usually much above normal (10 K.A. units) and the colloidal tests are usually negative for the first few weeks. In hepatitis the colloidal tests are strongly positive. The alkaline phosphatase is normal or moderately raised. In chronic cases where cirrhosis is suspected the plasma proteins should also be estimated.

EMERGENCY SERVICE

Every hospital group now has a 24-hour emergency laboratory service. Arrangements differ in different areas but in general a practitioner who wishes to have an urgent specimen examined should phone the main hospital to which the area blood

bank is attached. The technician or pathologist on call will then be informed by the hospital telephonist. In past years diphtheria swabs were the main business of after-hours work in laboratories but, with the virtual disappearance of that disease, first place has been taken by blood-transfusion requests. In most cases the patient should be transported to hospital but there are occasions when haemorrhage or shock is so severe that removal is impossible. A labelled specimen of the patient's blood (5 ml. clotted) is sent to the laboratory with a completed blood transfusion request form giving full name, age, sex, history of previous transfusions and of any transfusion reactions with, in the case of women the number of pregnancies, abortions and mis-carriages. This form is a legal document and the person signing it is authorizing the transfusion and taking a share of responsibility for its consequences. If the case is one of dire emergency with the patient's life at stake, the messenger may take back a bottle of checked Group O Rh. negative blood to be given, unmatched, to the patient. Under no other circumstances can the risk of giving unmatched blood be taken. Meantime at the laboratory the patient's blood is grouped and further bottles are cross-matched by an emergency rapid procedure which takes approximately one hour from receipt of the specimen. Plasma should be given in the interim. In some centres no blood is issued without a full 2-hour cross match. If no flying squad service is avail-able the practitioner would be well advised to call out a surgeon or obstetrician to supervise the management of the case.

In cases of coma where it is not possible to get the patient to hospital, blood may be sent for urea and sugar estimation, or the urine for barbiturates. Cerebrospinal fluids from cases of suspected meningitis are also a justification for emergency calls because of the importance of early specific treatment.

It should be realized, however, that specimens sent during laboratory hours will always receive fuller and more expert examination than those received at night. The laboratory works as a team and one man in the small hours of the morning cannot be expected to be as effective as a co-ordinated group of haematologists, biochemists and bacteriologists.

CONCLUSION

The aim of this paper is not to teach clinical pathology to the practitioner who already uses the pathological services fully, but to encourage the non-user to "have a go". When next a difficult problem arises in his practice he should send an appropriate specimen (or the patient) to the laboratory and state his problem. It will be surprising if some help is not forthcoming; thus encouraged, he may take the laboratory into partnership in his practice, to the benefit of himself and his patient.

TOWARDS BETTER HEALTH AT WORK

BY

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There is now in this country a working population of twenty four millions, the greatest number in our history. Every day the number of people away from employment for reasons attributed to ill-health averages one million, with an added sixty thousand due to injuries at work. Sickness absence accounts for 280 million working days lost yearly; injuries sustained when working accounts for another 18 million days, to which must be added 1½ million days due to diseases directly due to the individual's occupation. Time lost owing to accidents sustained at work and to sickness exceed that due to industrial disputes seventy-five times. Industrial production must suffer when the producers are absent; living standards, including our standard of health care in a National Health Service, are threatened when national output declines. A healthy productive industrial community is an asset anywhere in the world: in this country is essential.

NEED FOR INDUSTRIAL HEALTH SERVICE

The need of medical services at places of work is now hardly in dispute and their growth in recent years, while not spectacular, has been notable. The British Medical Association in 1941 recommended that at every factory, irrespective of size, there should be arrangements made for supervision of the workpeople. Four years later the Royal College of Physicians proposed the formation of a national industrial health service, applicable to every kind of employment, and made detailed recommendations for its organization. That such a service should be launched was also urged at about the same time by the Trades Union Congress. In 1949 the British Medical Association published its report on this matter in which considerable expansion of the then existing services was forecast. In the same year the Prime Minister appointed the Dale Committee, whose findings in 1951 included the recommendation that there should eventually be complete provision for occupational health covering not only industrial establishments of all kinds, both large and small, but also other occupations referred to by the Gowers Committee two years previously, after its enquiry into the health, welfare and safety in non-industrial employment. It was recognized at that time that this recommendation could not be made effective without first gathering more experience from surveys and experiments. At the end of 1954 the Minister of Labour and National Service stated his intention of developing health services in places covered by the Factories Acts and that the Committee especially set up to advise him would consider how best this should be done. Arising from this there are now two important field surveys being made; one is in the town of Halifax, chosen largely because of its many varied industries, and another amongst pottery workers whose occupation has long been associated with some risk to health.

It may therefore be concluded that while not all think the same about the ways by which medical services in industry should be extended, on the need of such extension there is unanimity of opinion. The political parties and the Trades Union Congress are not always in agreement; the same may perhaps be said of the British Medical Association and the Royal College of Physicians. When all of them think alike, it is indeed remarkable. Those who will be called upon to provide, use and pay for the proposed medical services should take notice.

PRESENT FACILITIES

There is at present no comprehensive occupational medical service in this country, but there are many separate units. The Factory Department of the Ministry of

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Labour and National Service has done important work for many years. The Factories Acts contain special requirements for promoting health at work, including a good working environment such as cleanliness, adequate sanitation, lighting, heating and ventilation, with protection of the workers against disease arising from work processes, and provision of first aid in case of sickness and injury. Under the control of the Chief Inspector of Factories there is the factory inspectorate with four specialist branches consisting of the medical, engineering, chemical and electrical inspectorates, all of whom are concerned with the prevention and detection of occupational disease and injury. The medical inspectors are helped by part time Appointed Factory Doctors who are usually general practitioners. In 1956 there were 16 whole time medical inspectors and 2,128 Appointed Factory Doctors, the duties of the latter being

(1) Medical examination for fitness for employment under the Factories Acts (including annual re-examination) of young persons under 18
(2) Statutory periodic medical examination of workers employed in certain unhealthy processes.
(3) Investigation and report on cases of industrial disease notifiable under the Factory Acts.
(4) Investigation and report on cases of death or injury caused by exposure to fumes or other noxious substances.

A small medical inspectorate covers the coalfields and quarries in Great Britain and is particularly concerned with all health measures applicable to those who work therein, as specified by the Mines and Quarries Act.

Government departments like the Treasury, the Ministries of Fuel and Power, and Supply have their own well organized medical services, as have also the nationalized industries such as the National Coal Board, Gas Boards, London Transport, British Railways, National Dock Labour Board and Atomic Energy Authority.

There are also many examples to be found of excellent medical care in private industrial companies, especially those of large size and with special health risks. In some cases, as in Slough, a group of small independent industries has formed a common health service, and these have proved very successful.

The number of factories which in 1948 had medical services other than statutory services is shown in Table 1.

Although nearly half the factories with more than 250 workers are seen to have some medical supervision in addition to statutory requirements, of the smaller factories employing the greater part of the factory population only about one per cent have any services beyond those required by law. Moreover, places of employment like shops, offices, hotels and catering establishments are not covered by the Factories Act, are not included in this table, and generally lack medical supervision. Therefore, although there has been development of medical work in industry in recent years, planning for the future must still be largely concerned with the needs of the many small working groups.

THE INDUSTRIAL DOCTOR'S WORK

It is the task of the doctor in industry to advise management on all matters relating to health at work. He must be accessible to every member of the organization who wishes advice and must make a special study of the workpeople and of the conditions in which they work. A sound knowledge of chemistry, physics and engineering principles may be required. His duties are varied but he will always need good clinical judgement and the ability to gain the respect of both management and workpeople. A satisfactory relationship must be attained with family doctors, hospital staff and Public Health Officers. An efficient emergency casualty service for the treatment of those who become sick or injured at work must be organized. Continued medical care of conditions which can be treated to the patient's advantage while at work, should be carried out with the agreement of the patient's doctor. An analysis of the different kinds of work done should be made, assessing the demands

TABLE 1

	Factories with					
	Less than 26 workers	26–50 workers	51–100 workers	101–250 workers	Over 250 workers	Total
1. Number of factories in Great Britain	202,868	18,207	10,475	7,335	4,884	243,769
2. Number of factories with definite arrangements for medical services (other than statutory examinations of young persons) of one or more of the kinds indicated in 3 ..	845	453	433	750	2,018	4,499
3. Kinds of Medical services in the factories in 2:						
(*a*) General medical supervision over health of employees, including study of sickness records, working conditions, and to the firm on question of factory hygiene. ..	230	137	223	418	1,517	2,525
(*b*) Supervision of first aid or ambulance room services	261	145	220	391	1,494	2,511
(*c*) Periodical medical examinations (whether compulsory or not) of particular groups of workers, e.g. those in employment with special health risks.	545	297	200	311	921	2,274
(*d*) Periodical medical examinations of all workers (i) at the factory ..	27	13	20	50	119	229
(ii) at the doctor's surgery	4	1	4	3	6	18
(*e*) Examination of new entrants and applicants for employment (i) at the factory ..	76	71	124	253	1,034	1,558
(ii) at the doctor's surgery	76	17	20	32	80	225
(*f*) Examination of workers returning after illness (i) at the factory ..	46	46	83	184	800	1,159
(ii) at the doctor's surgery	68	7	11	21	34	141
(*g*) Other kinds except statutory examination of young persons	48	36	69	119	465	737

made by each on the worker; it then becomes possible to give an informed opinion regarding the work which can safely be undertaken, for example, by the young, the elderly and all who are temporarily or permanently incapacitated. In this way good rehabilitation can be provided at the place of work, and much unnecessary absence avoided. There are many harmful conditions met in industry which need recognition and control; they include dust, fume, large temperature change, excessive noise, poor illumination and ventilation and avoidable fatigue. The doctor may require help in his work from colleagues such as chemists, physicists and engineers, and as leader of the health team he must work in harmony with them. The doctor

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in industry must practise both preventive and curative medicine, but primarily it is his duty to anticipate trouble and prevent it, to detect occupational disease at its earliest stage, to investigate and eliminate all causes of disability and to attain a high standard of health in his community.

WAYS TO ACHIEVE IMPROVEMENTS

For this work to progress, a new administrative framework will be necessary which the Government must initiate. A rapid introduction of medical services throughout industry at this time is not practicable; the extension of these services should be gradual and selective. There is a strong argument for acting quickly to reduce the burden of sickness which accounts for about three quarters of all absence from work, but a large and costly project making big demands on medical and nursing manpower, money and materials must be avoided. The standard of British practice in industrial health is high, perhaps the highest in the world, and this should be in mind when planning an advance. Much of medical practice today suffers from domination by party political interests; a further extension of this throughout industry, hampering management with faulty legislation supposed to improve health, would be a very serious matter and a costly failure. By legislation and much administrative change, of which a good deal has been heard, it might be possible before long to have a greatly increased number of treatment rooms in industry with doctors or nurses entering them from time to time in an attempt to exercise some kind of control. In such a scheme, which has its advocates there would no doubt be regional consultants appointed to supervise, a regional board to appoint them, and a Minister on top responsible to Parliament. No significant increase in health, however, would be likely to follow; in so far as the chief responsibility for health at work would be shifted onto the wrong shoulders, there might well be less. The promotion of occupational health is by no means wholly a medical matter. Employers, managers, trade unionists, physicists, chemists and engineers amongst others must be closely concerned in the matter. Employers are always likely to be better placed than doctors to improve health at work. It is they who select the people employed, who train (or do not train) them for allotted tasks, who decide the materials to be used and the method of use. It is they who control the working environment, upon which health so often depends. It is traditional in this country that the responsibility for health, safety and welfare of workpeople rests primarily with the employer, often advised by specialists, and always needing the interest and help of the workpeople themselves. This tradition is wholly good and should be strengthened. Although not always recognized, the interests of employers and employed concerning health at work are the same; when this is not yet accepted, it is the first task of the doctor in industry to see that it becomes so.

Professor I. G. Davies, Medical Officer of Health at Leeds, has drawn attention to the dangers of an artificial separation between medical care at work and at home. Any proposed industrial health plan should not create fresh divisions amongst doctors but should try to draw existing sections closer together. This has led to the suggestion of joining the statutory duties at places of work of the medical inspectors of mines and of factories, of the appointed Factory Doctors and of the Medical Officer of Health, thus making one preventive industrial health unit, and it is claimed that this would solve the chief problem of the small factory. A new medical inspectorate at central, regional and local levels would be created. The present medical inspectors of the Ministry of Labour and National Service would provide the regional level and one of their duties would be to make good contact with the administrative medical officer of the Regional Hospital Board and through him with the hospital services. At the local level it has been suggested that the Medical Officer of Health and his staff, assisted by the Appointed Factory Doctors should be responsible with the factory inspectorate for the enforcement of health standards and for medical examinations. A likely objection to a scheme of this kind is that it might lead to the handing over of much responsibility for industrial health to the Local Authorities, but possibly this could be avoided by seconding the

Medical Officer of Health, for his medical inspectorial functions, to the factory inspectorate without involving the Local Authority further. A stronger objection to this plan, however, is that for the promotion of health at work it relies too much on doctors who would be looked upon, whatever their title, as inspectors enforcing the law. There must always be some duties requiring an inspectorate but there is a point beyond which health cannot be imposed and we need an industrial climate in which those at work are encouraged to create for themselves conditions in which health can grow. Those industries, for instance, which have already provided good medical services should be encouraged to continue without any interference from outside bodies. An industrial health service should belong not to central or local government, but to those in industry who should be permitted some choice in selecting medical advice.

THE PLAN OF PREVENTION

Remembering that the chief deficiency at places of work is not methods of treatment but prevention of disability, the outline of a proposed occupational health service can now be sketched. Of the several Ministries now concerned, the Ministry of Labour and National Service, with its Factory Department, has the greatest experience and its work in this field needs expansion. The Factory Department's medical inspectorate is very small in number and should be increased so that fuller attention can be given to the detection of occupational ill health which may now pass unrecognized and certainly unnotified. Help will be required from occupational hygiene laboratories which have been successfully provided in other countries such as the United States, Canada, Finland and Sweden, but which this country lacks. In these laboratories, of which 6-10 will be required, various specialists including doctors, chemists, engineers and physicists should work together, using their combined skills, with all necessary equipment, to assess and correct occupational hazards. They should be able to investigate problems submitted to them by the employer, industrial doctor, factory inspector or Medical Officer of Health. Air samples could be taken from the factory, dust counts made, radiation measured and surveys made of the lighting or ventilation. The laboratory staff would thus provide an important advisory service to industry on relevant matters of occupational health. There is a precedent in this country for such laboratories in the Public Health Laboratory Service, administered by the Medical Research Council, but the proposed occupational hygiene laboratories, which would not primarily be concerned with research, could probably be best placed under the control of the Factory Department of the Ministry of Labour and National Service. A few of the larger industries already have such laboratories for their own use, but a service of this kind for all occupational groups is urgently required. Industry itself might reasonably be expected to contribute towards the cost and some Universities would find such laboratories worthy of their support for their teaching value.

POST-GRADUATE TRAINING FOR GENERAL PRACTITIONERS

The general practitioner, after some additional training for the special needs of industry, has a part to play much greater than at present. In Industry, as in the home, preventive and curative medicine can be practised to the advantage of both doctor and patient. It is already the policy of the government to encourage industrial managements to make their own arrangements for introducing medical advice and care at work, and three practical measures to further this object would be to grant some tax remission to those employers who do so, to make greater use of those sections of the Factories Acts whereby managements can be compelled to provide medical care when the conditions at work make this advisable, and to ensure that general practitioners and other doctors can without difficulty take short post-graduate courses in occupational health. The type of post-graduate instruction most likely to be useful is an intensive one lasting one or two weeks, these not being a

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substitute of course for full post-graduate training leading to a Diploma in Industrial Health. There has been demand for such courses but at present a general practitioner must not only pay the fee for the course but also provide for another doctor to do his practice work. Refresher courses are allowed to general practitioners under the National Health Service Act and similarly grants should be made available to them to cover the essential costs of attending an industrial health course. It has been suggested by the Occupational Health Committee of the British Medical Association that the course should be on the following lines:

Objects—To introduce doctors to medical work in industry so that they may use the time they devote to this work to the best advantage. In the one or two weeks available it is possible to give the newcomer a general idea of a doctor's work in industry. Techniques alone are not enough; an effort should be made to provide an essential background to the subject. In particular the opportunities for preventive work should be stressed.

Content—The following general subjects are suggested:

(1) Orientation: The aims of an occupational health service and its relation to the National Health Service and to other social services in the community.
(2) The Factory: Its functions, its organization, its management, and its personnel. The place of the doctor. The legal requirements for health, safety, and welfare. How to examine the working environment and assess working conditions, in co-operation with other experts. Other places of work will be dealt with similarly.
(3) Treatment at the place of work: Its nature and extent and the organizational and training problems involved. Accommodation and equipment.
(4) The nurse's work in industry.
(5) Medical examinations: their purpose and content.
(6) Records: what to keep and how to keep them; their purpose and value.
(7) Accidents in industry—industrial safety.
(8) The principles of the prevention of industrial disease illustrated in detail from local industries.
(9) Skin disease in industry.
(10) The care of special working groups—that is, young people, women, the elderly.
(11) The placement of the handicapped; the working of the Disabled Persons Employment Act.
(12) Clinical lectures on common diseases designed to emphasize the place of work in their management—that is, coronary disease, peptic ulcer, epilepsy, diabetes, etc.
(13) Sources of information—people, organizations, and literature.

Method. The following methods of teaching might be used:

(1) Lectures with questions and discussion.
(2) An occasional seminar if the composition of the class warrants it—that is, if it contains enough men with some experience of industrial medicine.
(3) Demonstrations—safety and rescue appliances.
(4) Visits: These should be specially selected and confined to places with a good occupational health department. The visits should be planned to illustrate specific subjects.
(5) Discussions (perhaps at places of work) with works manager, personnel manager, shop steward, if suitable people are available.

A course such as this could usefully be taken by doctors holding part-time occupational health appointments and by those about to take these up. Those who would take part in the teaching are experienced industrial medical officers, factory

inspectors, some clinical teachers and others with special industrial experience, not necessarily with a medical qualification. At least six universities make provision for teaching of occupational health and it is there that these courses could best be arranged at first. Advanced and refresher courses should also be held, more often than at present, for those with greater experience of industry and those concerned with special health risks. Much occupational health could best be taught to medical students by clinical teachers, at the bedside and in the outpatient department, and those younger men and women, including registrars, who will later be responsible for undergraduate teaching should also be encouraged to attend these courses. At present too many students qualify with insufficient knowledge of medicine in its occupational aspects.

USE OF MEDICAL AUXILIARIES

Apart from the work of doctors there is plenty of scope in industry for the employment of auxiliary nurses, and of men and women trained in giving of first aid. These last especially are required in greater numbers, whatever form their ordinary employment may take in the factory, being very useful in emergencies and in the reduction of accidents by their example in safe working methods. One of the duties of the doctor in industry is to ensure that these people are properly trained and encouraged to do this work efficiently.

REGIONAL ADVISORY COMMITTEES

The Minister of Health has recently asked Regional Hospital Boards to appoint standing committees to advise on rehabilitation services locally but there is need of committees having wider scope and having within their terms of reference all matters concerning industrial health services, including rehabilitation. Committees with strong representation from doctors, industrial managements and the Unions already exist in some industrial centres in this country and have done useful work in advising local industries on health problems and on the introduction of medical services; so far progress has been made by voluntary effort only and government initiative now seems necessary, acting through the Ministry of Health and the Ministry of Labour and National Service.

CONCERNING THE MEDICAL OFFICER OF HEALTH

Absence from work on account of illness of all kinds exceeds that directly due to occupations some 200 times. Little is known of the extent to which all this sickness is preventable and the proportion of it which arises in the home, workplace or elsewhere. It is anomalous that, although the chief duty of a Medical Officer of Health is to inform himself about all matters affecting, or likely to affect the public health, he is not at present concerned with industrial conditions apart from some relating to sanitation. He has very little opportunity of obtaining information which might enable him to improve the health of people at work; information derived from health visitors, district nurses, notification of infectious disease and the records showing applications of employed people for sickness benefit are together quite insufficient for this purpose. It has been more than once suggested in recent years that all employers of, say 25 people or more, in factories, catering establishments, offices or elsewhere, should notify the Medical Officer of Health monthly of the sickness incidence at the place of work. Information given would include the numbers employed, sex, the number absent for three consecutive days or more and (when known) the nature of the disability. The information would be incomplete but it should surely be of assistance to the Medical Officer of Health to know that absence from work in any establishment was high or low, the trend of it, and at least some of the reasons for it. He would then have facts regarding the sickness incidence in different occupations and should be able to follow up with further enquiries if this seemed advisable. Measures to prevent sickness have often followed the

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introduction of its notification and this proposal, if carried out, would probably lead to legislation insisting on satisfactory health standards at all places of work, similar to those now applying only to factories.

SUMMARY

To summarize, it is believed that the need of an extension of medical care at work is accepted and that action to provide this should now be taken. Attention must especially be paid to the requirements of the smaller working groups and to those work places not covered by the Factories Acts. Priority should be given to the creation of a preventive, rather than a curative service and in this respect occupational hygiene laboratories with specialist staff and equipment are much needed. The imposition of a vast, expensive, bureaucratic service is unnecessary, likely to worsen and not better health, and must be resisted. The opportunity is presented of drawing together doctors and other specialists working in different fields so that they may apply their skills in preventing illness and promoting occupational health; this opportunity should be grasped. The law in some respects needs strengthening but health cannot be imposed on employers and workpeople, who must be encouraged to create for themselves conditions in which health can grow.

CHILD ART

BY

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Children, to be healthy, must be both mentally and physically well, and good health includes the preservation of sight and the development of understanding through visual stimulus. Art is the offspring of visual stimulus, and arts and handicrafts can contribute to the well-being of both children and adults, particularly in a mechanically ordered world which tends increasingly to deprive human beings of their natural urge to create and make things for themselves.

The belief that art can make a positive contribution to the mental development of the child has been growing since the end of the first world war, and in 1953 an exhibition at a UNESCO conference of twenty-two nations on the subject of Child Art, held at Bristol University, showed clearly that much thought and experiment had been given to the educational value and practice of art by children.

Art, which is an expression of creative talents is not capable of being tested effectively by the yardstick of examination, and for that reason it often met with neglect in the past, particularly in grammar schools.

It is satisfactory, however, to be able to look round many schools today and to see that Art is now regarded as one of the subjects by which character and personality can be moulded and developed through its practice, and also, that through a study of its history, a clearer view of world history may be gained.

THE ART OF A CHILD

There is much difference between the art of the professional artist, who logically develops and carries out his work to its pre-determined conclusion and the art of the child whose work is the expression of a spontaneous desire to draw, paint, create or make, usually quite unhampered by the difficulties of technique or theory. The desire to master technique comes soon enough, but not before the age of ten in most children, and it is important that the teacher should realize this; for the effect of a teacher who tries to impose professional or adult techniques of drawing and painting upon children who are not ready for them can be catastrophic. The great danger in all teaching lies in the assumption that the only reason for the pupils' presence in class is that they should be intelligently receptive: that they should be conditioned, indeed, into becoming receptacles into which useful knowledge can be poured and stored. Fortunately, it is now being realized that education should also include the experience and development of perception, and that what has been intelligently perceived may promote and contribute to aesthetic and creative exercise.

As a child's awareness of the sensations of sight and hearing become more pronounced, so, if he is properly guided, will his powers of visual expression develop.

Most of us who are parents are rightly concerned that our children have eyes that are sound physically, but I doubt whether many fathers or mothers are unduly concerned about the problem of teaching their children how to *use* their eyes intelligently and still fewer who have even considered that their children's eyes can be used creatively.

SENSE OF ACHIEVEMENT

The value of art as an exercise for a child lies in the fact that it is the application of knowledge gained through the eyes; but it is enhanced also by the fact that it

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involves the stimulating use of materials, colours, brushes, paper, and so on. The child is thus given an immediate sense of achieving something, and because his achievement is concerned with his own private and personal visual impressions, he is developing his own personality. Unconsciously, perhaps, he is also submitting to a discipline which has its own beneficial effects, and as he grows older, if he does not lose his visual stimulus, that discipline will become increasingly valuable, for it is the discipline of craftmanship.

The surgeon and the dentist know as well as the artist the real value of craftmanship not only in respect of the job done but to the doer himself.

PLACE OF THE TEACHER

I would stress the importance of the teacher, for teaching itself is a creative art. We all know that children are susceptible to outside influences, and that the weight of a teacher's authority can easily be greater than that of the parent—so much the more carefully, therefore, should his influence be applied.

One of the first things a teacher must do is to encourage the desire to create and to use materials properly and with conviction. The idea that is sometimes held, that all that is required is to supply children with paper and paint and then wait for the miracle to happen is entirely erroneous; but this is not to suggest that the diametrically opposite approach of painting by rule and order is correct.

It is the task of the teacher to ensure that each child works consciously as an artist and it is not always easy to create the right conditions under which this may be achieved.

The teacher must believe with conviction that which the child artist believes instinctively, namely, that reality is fundamental to all true art. By this I mean a personal vision expressed with belief and enthusiasm. Realistic vision may approximate to the true appearance of what is being painted, but it may equally be something more symbolic or even near to the completely abstract. It is necessary in these days to remember that the photograph is not the yardstick of visual reality, nor is a photograph a work of art just because it is an image. The reality of art lies in the reality of its creation or its design to the artist who makes it. It is the reality of the child's own work to himself that is so important, and not the degree to which that reality approximates to the adult's vision. Indeed, it is the child's conception of reality, which so often ignores true perspective, that appears so charming to the adult spectator.

ABSTRACT AND IMAGE

Nature is the material of the artist, and it is the impact of nature upon the artist's senses that promotes the making of a work of art. At times the result of that impact may take the form of a faithful representation of appearances, but it may equally take the form of an almost abstract arrangement of colour such as might be seen in a sunset observed from a cliff top, with no intermediary objects in view, or it may take the form of the symbolism that has been used in folk art from the beginnings of civilization. Symbolic art and abstract art are not necessarily any less or any more artistically valuable than realistic art, and in the special realm of child art the same applies.

The child, the unselfconscious artist, is to some extent at a disadvantage compared with the trained artist, but provided he has the spirit to respond to his visual impulses he may possess certain advantages. For instance, he does not worry over much about perspective nor with size relationship. He sometimes disregards colour relationships provided that what he is doing is satisfactory to his creative urge, but we may find of course that colour blindness is the cause, a defect that is more common than many lay people imagine.

Owing to the domination of the photograph over our day to day visual responses, we are apt to forget that before the camera was invented it would have been considered

quite correct to give prominence to an important figure in a painting or a piece of sculpture by making it larger than its surrounding figures or by exaggerating it in one way or another. A child, whose mind has not yet been conditioned by the photographic image, will often respond to such reasoning. I do not want to imply that child art should be kept childish beyond its normal span. As children grow older they usually grow more objective in their approach to drawing and painting, and in adolescence the problems of teaching become in consequence very much greater.

THE JOY OF IT

In the practice of art by children, and even by adults, the pleasure of using material, of the feel of paint, or the rhythmical use of the hands is contributory to success. There is an enormous satisfaction to be gained out of feeling that colour is being applied as the mind directs, or that the hand is drawing in harmony with the object drawn. In pattern making, for instance, there are many exercises that demonstrate the value of rhythm in the physical aspects of painting to a degree that may not be generally appreciated.

While the response to art of the average child between the ages of five to twelve years is one of happy confidence, the adolescent girl or boy often faces the problem of drawing and painting or even of craft work with difficulty or even distaste.

AND FEARS

Fear is the chief source of most of the discouragement felt by adolescent boys and girls. They naturally begin to compare their work with that of adults, and their immature critical faculties cause them to look for qualities in art that are either false or beyond their grasp. They often attempt a more sophisticated expression based on glossy magazine cover design, or they ape the photograph with equally disastrous results.

The conflict which may appear during adolescent years between artistic and creative instincts on the one hand and the acquirement of knowledge on the other can be resolved by the sympathetic teacher. Teachers have the task of mitigating the fears of adolescence, and as the good teacher knows that the success of a work of art, depends upon the intensity of the visual and creative experience, and *not* upon a special kind of dexterity, his main task is to give confidence to his growing pupils.

Once confidence has been gained, much of the difficulty of ensuring the continuity of artistic expression right into adult years will have been solved.

ADOLESCENCE

The needs of individual adolescents vary very much more than those of younger children, for while confidence and personality develop steadily in some boys and girls as individuals, others need companionship. Some develop best by working individually and alone, while others can only make progress by working in a group.

A great deal of group art work is now being undertaken in schools with amazingly good results, and in Bristol there are examples of large decorative projects successfully carried out by groups of children working together, often under the leadership of one child who the rest may feel has the necessary creative determination.

EDUCATIONAL VALUE OF ART TODAY

The contribution of art to the development of civilization, its place in history showing us how nations have lived, its place in present day life as a means of awakening discrimination and taste—all these are so important in the education of children; yet,

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on the whole, how little are they regarded compared with the development of skills for purely material ends!

We are living in a world of mass production, of television, gramophones, picture reproductions and machine-made art. I am not for a moment going to condemn these wholly as the works of the devil, but there is no doubt that day by day they are gradually making it less and less necessary for ordinary men and women or boys and girls to give expression to the creative instincts with which they were born.

Not every boy or girl can expect to become an artist, but art in education can be an essential aspect of the development of well being in children, Not only children but men and women can find that purchased pleasure becomes unsatisfying. They may find also that a sense of achievement and a release from stress that lies in the practice of arts or crafts are benefits that are not to be measured in pounds, shillings and pence.

ACUTE NECROSIS OF THE LIVER IN PREGNANCY

A Clinical Pathological Conference held at Canynge Hall on 23rd October, 1956

CHAIRMAN: PROFESSOR T. F. HEWER

Dr. G. F. Jolly: This patient, a woman, aged 27, who was normally domiciled in Northern Ireland, first came to Bristol in February, 1956, when she was five weeks pregnant; she had had no previous children. She was seen at Southmead Hospital at the end of that month by Dr. P. Phillips. The date of her last menstrual period was given as 7th January, 1956 from which it was calculated that she would be due on 14th October. The height of the fundus corresponded with these dates. Her blood pressure and urine were normal, there was no oedema, and her weight was 7 stone. A few days later there was slight leucorrhoea for which acetarsol pessaries were prescribed. Regular ante-natal supervision was carried out by her general practitioner. Her blood pressure remained at 120/70 mm. Hg. or less and there was no albuminuria.

On 8th August, at the 30th week of gestation her blood pressure was found to have risen to 140/90 mm. Hg. and she had swelling of the feet and hands. She was referred again to Dr. Phillips who advised more rest and suggested Sodium amytal gr. 3 nightly. After this there was no further rise in blood pressure, no albuminuria and only occasional swelling of the feet and ankles.

On 17th September, she was admitted to Southmead Hospital, 36 weeks pregnant and thought to be in early labour. There had been backache for ten days and some pain before micturition. In appearance she was a thin sallow girl with greying hair, carious teeth and a marked squint. The heart, lungs and urine were normal, the blood pressure was 160/100 mm. Hg. and the fundus height corresponded to 34 weeks gestation. The presentation was a vertex, L.O.A., the head was free and the foetal heart was heard. She was confined to bed and given Sodium amytal gr. 3 six-hourly. During the next few days her blood pressure varied between 120/70 and 160/100 mm. Hg. and daily urine testing revealed no sugar or albumin, until 24th September, when a trace of albumin was found.

On 25th September she vomited twice and complained of sharp pains in the right flank, worse on lying down. There was no abdominal tenderness. The next day she fell out of bed but made no complaints. On 27th September when seen by Dr. Phillips on the morning round, she was very drowsy with sluggish reactions. She was, however, quite rousable and no abnormal physical signs were found. All sedation was stopped. The next day she was still very drowsy but taking fluids well. Her blood pressure was unchanged and the urine was normal. On 29th September she was slightly less drowsy but looked ill and was now definitely jaundiced Hb. 87%, W.B.C.'s 10,000 per cu. mm., serum bilirubin 5·2 mgms. per 100 ml. She was seen by Dr. H. G. Mather who agreed with Dr. Phillips that delivery should be expedited on account of impending liver failure. Accordingly that same evening a surgical induction was carried out. I found the cervix to be one finger dilated. The fore-waters were ruptured and the head, which was presenting, was pushed into the pelvis. A small septum in the lower third of the vagina was broken during the process. Labour soon became well established but the foetal heart which had been heard when the membranes were ruptured could be heard no longer. She laboured steadily during the night, her only sedation being 100 mgms. of Pethidine given by way of the intravenous drip which had been set up. At 8.45 a.m. the following morning the cervix was fully dilated but the head was high and lying transversely. There was no advance after one and a half hours and so Kielland's forceps were used for rotation and extraction under a low spinal anaesthetic, a caudal block having been unsuccessful. It was a difficult delivery as not only could the presenting part not be seen at the vulva but the pelvis was

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android in shape with prominent spines and a narrow supra-pubic angle. A fresh, stillborn, male infant weighing 6 lbs. was delivered. There was no excessive bleeding.

After delivery the systolic blood pressure fell to 60 mm.Hg., the diastolic pressure being unrecordable. By mid-afternoon with recovery from the spinal anaesthetic and the administration of pressor agents the blood pressure rose to 120/70 mm. Hg. but her condition steadily deteriorated despite continuous intravenous therapy and blood transfusion and the use of nor-adrenaline and 32 hours after delivery she died.

On the last day of life the blood urea was 64 mgms.%, serum alkaline phosphatase 84 units, serum bilirubin 14·7 mgms. per 100 ml., thymol turbidity 2 units and serum proteins 5·3G per 100 ml. (albumin 3·0, globulin 2·3).

Question: Had any drugs been taken which might have had a toxic effect on the liver?

Dr. Jolly: Apart from the Sodium amytal the only drug which there is any record of her having received before the onset of jaundice is acetarsol, which was administered early in pregnancy in the form of pessaries.

Dr. H. G. Mather: Some blood tests were taken at another clinic earlier in pregnancy. I mention this because there is a possibility that this might be a case of so-called "syringe hepatitis".

Dr. G. E. F. Sutton: Was the urine examined for the presence of leucine and tyrosine crystals? These are sometimes found in cases of acute necrosis of the liver.

Dr. F. J. W. Lewis: These were not observed but even in severe cases of liver necrosis they are not always found.

Dr. N. J. Brown (presenting the post-mortem findings): This was the body of a well-nourished young woman. There was moderately deep jaundice and a few purpuric spots were present on the anterior abdominal wall and on the legs. There was no oedema. There were lacerations of the cervix and vagina. The uterus was partially involuted; it had a shaggy haemorrhagic lining to which a piece of membrane was still adherent. The ovaries and Fallopian tubes were normal.

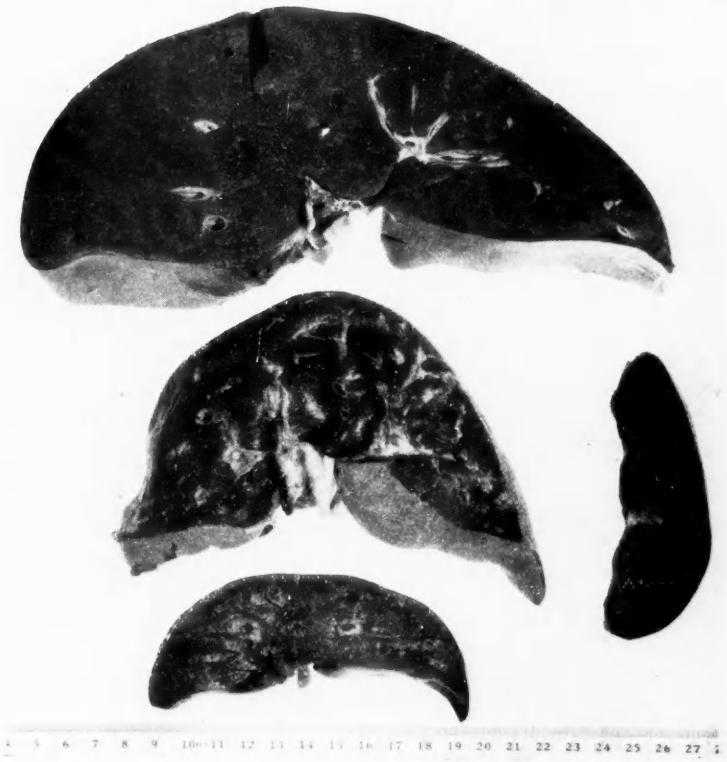
Not only was the skin jaundiced but so were all the organs. The endothelium of the aorta and the heart valves were stained bright yellow and there was a slight excess of dark yellow fluid in all the serous cavities. The cause of the jaundice was found, not unexpectedly, in the liver which presented a really remarkable sight. It is illustrated in Plate XII which shows three livers and one spleen. The uppermost of the three livers is that of a normal adult, the lowermost that of this woman's stillborn baby. The centre liver is that of the patient and it will be seen at once that its size is nearer that of the baby than the adult. Its weight was in fact only about one third of the normal. It was yellowish red in colour and extremely soft and flabby. The reason for this is that it was completely and absolutely *dead.* So, of course, was the patient, but the liver had died several days before she died. Histologically (Plate XIII) it contained not one normal liver cell. The picture is that of complete necrosis of the liver cells with only the fibrous framework and bile ducts surviving. There is no cellular inflammatory reaction. The only thing that one can say is that the cells in the central zones appear, if anything, rather more dead than those at the periphery of the lobules. The appearances are those of an acute necrosis of the liver, or, to use the older term, of acute yellow atrophy.

The spleen was firm and dark red. The lungs showed congestion and oedema. The adrenal glands and thyroid showed the hyperplasia normally found in pregnancy. The thymus was easily recognisable. Lastly, two rather unexpected features were found—in the kidneys and the pituitary gland.

The kidneys showed the slight physiological hydronephrosis of pregnancy. They were yellow in colour and slightly swollen with blurring of the cortico-medullary pattern and congestion of the boundary zone. Histologically there was necrosis of the second convoluted tubules with the formation of granular casts. The glomeruli appeared ischaemic. There was therefore an acute renal tubular necrosis.

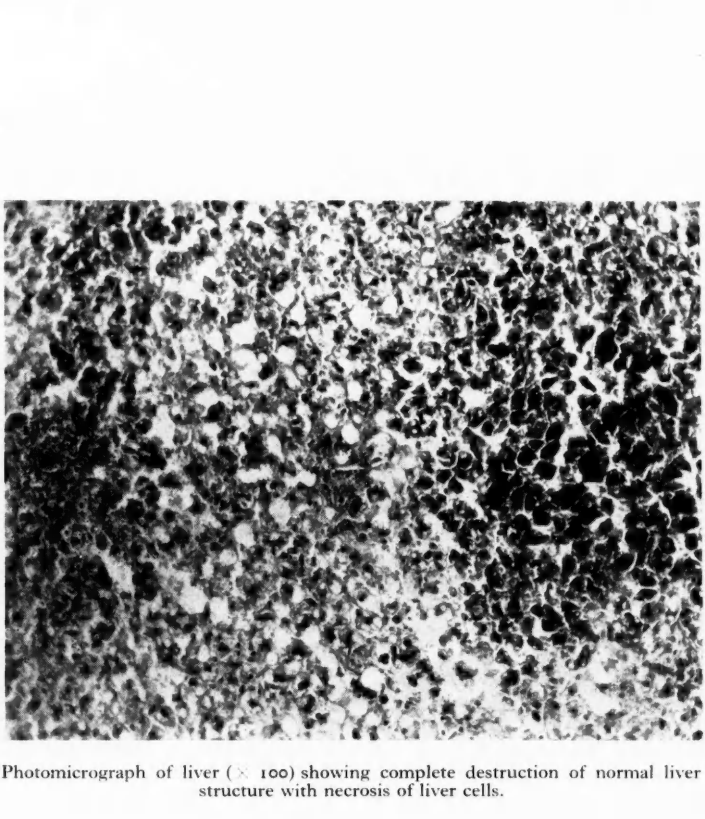
The pituitary showed no obvious gross abnormality but histologically this also showed patchy necrosis of the anterior lobe.

PLATE XII



(*Top*) Normal adult liver. (*Centre*) Patient's liver.
(*Bottom*) Baby's liver. (*Right*) Patient's spleen.

PLATE XIII



Photomicrograph of liver (× 100) showing complete destruction of normal liver structure with necrosis of liver cells.

To sum up, therefore, there was:

(*a*) Acute necrosis of the liver.
(*b*) Acute necrosis of the renal tubules.
(*c*) Acute necrosis of the pituitary.

Now let us try to relate these findings to the clinical history. I think the last two conditions—the renal tubular and pituitary necrosis—were secondary and almost terminal events which were brought about by the prolonged fall in blood pressure following delivery. They are well known complications of such hypotensive episodes during and after childbirth and they do not further concern us here. What we are principally concerned with in this case is the acute necrosis of the liver which gave rise to the severe and fatal hepatic failure. This of course, is also known to be sometimes associated with pregnancy but is very rare. In the seven years that I have been at Southmead I have seen only one other fatal case.

The cause of the condition is a matter for discussion. The possibilities are:

(*a*) Fulminating infective hepatitis.
(*b*) Homologous serum hepatitis.
(*c*) Nutritional deficiency.
(*d*) Drug reaction.

The clinical course of the present case is unlike that of infective hepatitis which not infrequently occurs in pregnancy and is usually a relatively mild disease. There is a possibility that it might be homologous serum jaundice as although she had had no blood transfusions there was a history of a diagnostic intravenous puncture some months previously and it is possible that the virus might have been introduced then. In favour of a virus aetiology of the present condition is the fact that the necrosis is more severe in the centrilobular zones which is the usual site of maximum damage in virus hepatitis. Against it however, is the complete absence of any inflammatory cellular reaction in the liver.

It has been suggested that acute hepatic necrosis of pregnancy might be due to nutritional deficiency. Himsworth and Glynn have shown that if rats are fed on a diet deficient in the amino-acid cystine they develop sudden acute necrosis of the liver. The very similar sudden onset of the disease in this case makes one wonder whether a similar mechanism might not be involved. There was no eivdence of any general state of malnutrition but it is not impossible that the demands of a growing foetus on a pregnant woman coupled perhaps with a somewhat capricious appetite might lead to a specific protein or amino-acid deficiency although I admit that in this case this is pure speculation.

Lastly, could this be a toxic effect of some drug? The only difficulty here is that the only drug administered in the weeks preceding the jaundice was sodium amytal which, as far as I know, is not supposed to have any toxic effects on the liver. The only other drug she had was acetarsol in the form of pessaries early in pregnancy.

There is, of course, the possibility that the liver necrosis might have been due to a combination of more than one of these factors. An attack of virus hepatitis might for instance have been made much worse by amino-acid deficiency, or a superimposed drug reaction, and all the time we have to remember that this was a pregnant woman at term when metabolic processes and body reactions as a whole are not quite the same as in the ordinary adult.

Prof. T. F. Hewer: Was there any fat in the liver?

Dr. Brown: I have not done a frozen section but in the paraffin sections it looks as if there is some.

Dr. Sutton: In the old days we used to see many more of these cases and it appears that it is much less common nowadays than it used to be. Acute yellow atrophy is a good name for it. It always occurred suddenly "out of the blue" and the patient was dead in a few days with the liver shrivelled up to a fraction of its normal size. I think dietary deficiency must have something to do with it and of course nutritional

deficiency used to be much more common than it is now which would explain why we don't see it so often these days.

Question: If the disease is due to protein deficiency would it not be logical to treat it by a high protein diet?

Dr. H. G. Mather: No. It is possible that a high protein diet might have some effect in *preventing* liver necrosis but it would be quite wrong to treat it with high protein as the liver is so damaged that protein metabolism is grossly interfered with and a great deal of the harmful effects of liver failure is due to the accumulation of amino-acids in the blood.

Dr. T. M. Abbas: This case presents many interesting problems. In the first place I do not agree that a woman with a blood pressure of 190/105 is, as is stated in the summary sheet, in a state of "mild toxaemia".

I should like to ask one question—We have been told that this patient had acetarsol therapy for her vaginal discharge, can we be assured that this was not taken orally?

Dr. Jolly: I can give no such assurance. I can only say that it was prescribed in the form of pessaries.

Dr. Mather: I think that the toxic effects which were previously ascribed to arsenic when given by injection are now generally accepted as being, in fact, homologous serum hepatitis caused by a virus due to the use of imperfectly sterilised syringes. I do not think there is much evidence that arsenic given by mouth has any toxic effect on the liver.

Prof. Hewer: It is difficult to say in this case whether there was a massive necrosis of the liver from the start or whether it is a zonal necrosis which has become confluent.

Dr. Brown: There was, as I showed just now, more complete necrosis in the centres of the lobules which suggests that there was a zonal necrosis to start with. This would fit in with homologous serum hepatitis.

Dr. J. E. Cates: Was the baby's liver examined?

Dr. Brown: Yes, and it appeared entirely normal. One might argue that this is against a virus infection but even if a mother has hepatitis late in pregnancy the baby is very rarely affected.

Prof. Hewer: In any disease of pregnancy the baby always gets the best of it.

Dr. Cates: What was this woman fed on during the fortnight preceding delivery?

Dr. Jolly: She had her normal diet despite her toxaemia. There was no reduction in diet.

Dr. Brown: Did she finally reduce her intake on account of vomiting?

Dr. Jolly: I believe she was feeding well. She did not start vomiting until 25th September—four days before the jaundice appeared.

Dr. Sutton: This case does not sound like one of virus hepatitis. When we used to see a lot of these cases we found that it was necessary to evacuate the uterus as soon as possible; otherwise they do not survive.

Prof. Hewer: The prognosis depends entirely on how much liver is left alive. The capacity of the liver cells to regenerate is tremendous but if too much is destroyed the patient must die.

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News from Societies

PROGRAMMES 1957–58 SESSION

BRISTOL MEDICO-CHIRURGICAL SOCIETY

9th Oct.: **Annual General Meeting and Presidential Address.**
13th Nov.: **Clinical Meeting** at Bristol Royal Infirmary.
11th Dec.: Mr. R. H. Belsey, Dr. J. E. G. Pearson *et al.* **"Lung Cancer".**
8th Jan.: Professor C. H. Stuart-Harris, **"Diseases in search of Viruses".**
12th Feb.: Professor J. M. Yoffey, **"The Lymphatic System"** (Film and Commentary).
12th Mar.: Mr. S. D. Loxton, **"Common Obstetric Emergencies".**
9th Apr.: Dr. C. T. Andrews, **"The Story of John Keats, Apothecary and Poet".**
14th May: Dr. W. A. Gillespie, **"The Hospital Staph.".**

THE DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY

3rd Oct., at 8.15 p.m.: **Meeting with Clergy** in Bishop's Palace.
17th Oct.: **Clinical Meeting.**
3 p.m. Cases on view in Medical O.P. Department.
4 p.m. Tea in Library followed by Discussion of Cases.
7th Nov., at 4 p.m. Joint Meeting with B.M.A. F. E. Camps, Esq., M.D. (Reader in Forensic Medicine, University of London), **"Truth is stranger than Fiction".**
(Exeter South-Western Dinner).
21st Nov., at 8.15 p.m.: **Clinico-Pathological Demonstration.**
12th Dec., at 8.15 p.m.: **Clinical Meeting** at the Princess Elizabeth Orthopaedic Hospital.
16th Jan., at 8.15 p.m.: Dr. Herbert Constable (Deputy Secretary of the Medical Protection Society), **"Medico-legal Hazards of the Doctor and Surgeon".**
6th Feb., at 8.15 p.m.: T. N. Fison, M.D., **"Two Cases of Glomerular-nephritis in Infancy",** and L. N. Jackson, M.C., M.D., **"A Notable case of Obesity".**
27th Feb.: **Clinical Meeting.**
3 p.m. Cases on view in Medical O.P. Dept.
4 p.m. Tea in Library followed by Discussion of Cases.
20th Mar., at 8.15 p.m., Professor J. McMichael, F.R.S., M.D., F.R.C.P., The Post Graduate Medical School, **"Hypertension".**
17th Apr., at 8.15 p.m.: **Annual General Meeting** and **Clinico-Pathological Demonstration.**

WEST OF ENGLAND CHILD HEALTH GROUP

24th Oct., at 5.30 p.m.: Miss L. A. E. Shaw, M.A., Lecturer in Social Studies, University of Bristol; and Miss M. E. Davies, Health Visitor Tutor, Welsh National School of Medicine, Cardiff. **"Discussion on the Health Visiting Report".** Department of Child Health Lecture Theatre, Children's Hospital, Bristol.
28th Nov., at 8.30 p.m.: Miss C. N. Grose, S.R.N., S.C.M., Assistant Matron, British Hospital for Mothers and Babies, Woolwich. **"Breast Feeding".** Department of Child Health Lecture Theatre, Children's Hospital, Bristol.
12th Dec., at 5.30 p.m.: K. Laybourn, Esq., PH.D., M.SC., Chief Inspector of Schools, Bristol. **"Selection of Children for Secondary Education".** Department of Child Health Lecture Theatre, Children's Hospital, Bristol.
16th Jan., at 8.30 p.m.: Kent Paediatric Society. Department of Child Health Lecture Theatre, Children's Hospital, Bristol.
6th Feb., at 8.30 p.m.: Miss J. M. Hood, M.A., Colonial Liaison Officer, Committee for the Welfare of Colonial Workers in Bristol. **"West Indian Families".** Department of Child Health Lecture Theatre, Children's Hospital, Bristol.
20th Mar., at 6.30 p.m.: By invitation of J. Macrae, Esq., M.D., D.P.H., Consultant Physician. **Clinical Meeting.** Ham Green Hospital, Pill, Nr. Bristol.
May. (Date to be announced later). W. C. W. Nixon, Esq., F.R.C.S., M.D., Director, Obstetric Unit, University College Hospital. **"Obstetrics from the Preventive Medicine Aspect".** Department of Child Health Lecture Theatre, Children's Hospital, Bristol.
June. (Date to be announced later). F. R. G. Heaf, Esq., M.A., M.D., F.R.C.P., David Davies, Professor of Tuberculosis, University of Wales. **Field Visit and Talk.** Department of Tuberculosis, University of Wales, Cardiff.

B.M.A. (Cornwall Division)

28th Nov.: **Dinner and Dance.** Hotel Bristol, Newquay.
December. A Medical Film Show in co-operation with the West Penwith Medical Society.
11th Apr.: B.M.A. Clinical Lecture by H. Osmond-Clarke Esq., C.B.E., F.R.C.P., on **"Pain in the Arm and Neck".**

B.M.A. (Exeter Division)

7th Nov., at 3.45 p.m.: Joint Meeting with Devon and Exeter Medico-Chirurgical Society. F. E. Camps, Esq., M.D., **"Truth is stranger than Fiction".**

B.M.A. (Gloucestershire Branch)

10th Oct., at Cheltenham: Presidential Address. Mr. R. Harvey, **"Doctor in Prison".**
14th Nov., at Gloucester: **Clinical Meeting.**
12th Dec., at Cheltenham: Dr. Mandelbrote, **"Psychiatric Problems in General Practice".**
9th Jan. at Gloucester: Film by Dr. G. R. Fearnley, followed by a Paper by Dr. Hope-Simpson, **"Research in General Practice".**
13th Feb., at Cheltenham: Dr. T. A. Pitt-Evans and Dr. Niven. **Demonstration of Laboratory Techniques and other clinical applications.**
13th Mar., at Gloucester: Dr. A. Tom. (Members of the Dental profession to be invited to attend.) Paper on **"Nitrous Oxide Anaesthesia"** and a film or demonstration of cases.
10th Apr., at Cheltenham: **B.M.A. Lecture.**
8th May, at Lydney: **Annual General Meeting.**
12th June, at Cheltenham: **President's Guest.**
The Cheltenham Meetings will be held at the Cheltenham General Hospital; the Gloucester Meetings will be held at Good Templar Hall, Park Road, Gloucester, with the exception of the Clinical Meeting in November, which will be held at Gloucester Royal Infirmary.

B.M.A. (South-Western Branch)

28th Nov., at 3 p.m: **Clinical Meeting.** Torbay Hospital, Torquay.

B.M.A. (West Somerset Division)

25th Oct.: **Dinner** with British Dental Association, at the County Hotel, Taunton. Mr. Horsnell, of the London Hospital Dental School, **"Diet".**
8th Nov.: **Joint Dinner** with the West Country Law Society at the County Hotel, Taunton. Mr. Skelhorn, **"Legal responsibilities of Wives".**
16th Nov., at 2.30 p.m.: Clinical Meeting at Musgrove Park Hospital, Taunton, **"Disorders of the Locomotor System".**
28th Nov.: **Sixth Annual Dinner and Dance** of the West Somerset Division at the County Hotel, Taunton.
Late February, 1958: Lecture: **"Recent Advances in the Treatment of Cancer".** Yeovil Hospital, Yeovil.

BRISTOL SOUTH MEDICAL GROUP

Meetings take place on the first Sunday in each month during the winter at the Bristol General Hospital at 8 p.m.

COSSHAM MEDICAL SOCIETY

8th Oct.: J. M. Cormack, M.B., CH.B., D.P.H., **"Presidential Address".**
5th Nov.: J. D. Kershaw, M.D., B.S., D.P.H. (late Chief United Nations Rehabilitation Unit), **"The Welfare of the Handicapped Child".**
3rd Dec.: W. H. Bradley, D.M., M.R.C.P., J.P., Ministry of Health (Senior M.O.), **"Control of Infectious Diseases".**
7th Jan.: G. D. Roberts Esq., Q.C., Recorder of Bristol, **"Experiences of Forsenic Medicine.**
4th Feb.: To be announced later.
4th Mar.: E. C. Morris Jones, M.B., B.S., B.H., D.P.H., D. M. Waddington, M.B., CH.B., D.P.H., Dr. Sarah Walker, M.D., D.P.H., **"Co-ordination in Maternity and Child Welfare".**
18th Mar.; **Buffet Dance,** Ashton Court Country Club.
1st Apr.: **Annual General Meeting.**
Meetings held at Cossham Hospital. Coffee at 8.45 for 9 p.m. Meeting.

BATH CLINICAL SOCIETY

All Meetings will be held at The Royal United Hospital, Bath, except that on 10th Jan., which will be at St. Martin's Hospital, Bath.

11th Oct., at 8 p.m.: **Clinical Meeting.**

8th Nov., at 8 p.m.: Cases, followed by A. Daunt Bateman, Esq., O.B.E., F.R.C.S., on **"Deafness in Children".**

13th Dec., at 8.30 p.m.: Ashton Miller, Esq., F.R.C.S., on **"Micturition Disorders in Child and Adult".**

10th Jan., at 8.30 p.m. at St. Martin's Hospital, Bath. Joint Meeting with The Bath Law Society. (To be decided.)

14th Feb., at 8.30 p.m.: Short papers, preceded at 8 p.m. by illustrative cases.

14th Mar., at 8 p.m.: Cases, followed by Dr. Lycett, D.P.H., on **"Prophylactic Inoculation and Vaccination: the present position".**

4th Apr., at 8.30 p.m.: T. F. Coade Esq., M.A., Headmaster of Bryanston School, on **"Adolescence".**

3rd May: **Annual Dinner** at Fortt's Restaurant, Bath.

CORNWALL CLINICAL SOCIETY

Secretaries: Dr. J. D. Hardy and Dr. B. A. Gwynne Jenkins.

4th Oct.: **Clinical Evening,** Redruth Hospital.

7th Nov.: Films: **"William Harvey and the Circulation of the Blood"** and other Films. Royal Cornwall Infirmary.

28th Nov.: **B.M.A. Dinner and Dance.** Hotel Bristol.

6th Dec.: Dr. Fox, Editor, *Lancet.* **"Medicine in Soviet Russia"** (Illustrated). Royal Cornwall Infirmary. (Ladies' Night.)

10th Jan.: **"Any Questions".** A Medical Quiz with Panel of Experts. Redruth Hospital.

31st Jan.: N. S. Barrett, M.S., F.R.C.S., **"The Evolution of Cardiac Surgery and its Present Scope".** Royal Cornwall Infirmary.

6th Mar.: **Clinical Evening.** Falmouth Hospital.

11th Apr.: H. Osmond-Clarke, C.B.E. B.M.A. Lecture, **"Pain in the Arm and Neck".** Royal Cornwall Infirmary.

1st May: **Clinical Evening.** Royal Cornwall Infirmary.

6th June: Cases and Demonstrations by Consultant Staff. Redruth Hospital.

4th July: **Annual General Meeting and President's Address.** Redruth Hospital.

WESSEX RAHERE CLUB

26th Oct., at 7.30 for 8 p.m.: **Autumn Dinner** at Lansdown Grove Hotel, Bath. Dr. R. I. W. Ballantine of Bart's, will be Guest of Honour.

SOCIETY OF MEDICAL OFFICERS OF HEALTH

West of England Branch

5th Oct.: Dr. J. Reynolds, M.C. **Presidential Address.** Taunton.

4th Jan.: Bristol.

5th Apr.: Bristol or Bath.

May: Joint Meeting with Southern Area of the Branch at Palace Hotel, Torquay.

TORQUAY AND DISTRICT MEDICAL SOCIETY

31st Oct., at 4.0 p.m. Opening Meeting. Miss Josephine Barnes, D.M., M.R.C.P., F.R.C.S., F.R.C.O.G., **"Current Problems in Obstetrics".**

7.45 for 8.15 p.m.: **Dinner and Dance** at the Palace Hotel, Torquay.

19th Nov., at 8.30 p.m.: Arranged by the Fellowship of Doctors and Clergy—Dr. Robert Mortimer, Lord Bishop of Exeter, **"The Care of the Aged".**

28th Nov., at 3 p.m.: **Combined Clinical Meeting** with S.W. Branch of British Medical Association.

12th Dec. at 8.30 p.m.: Dr. D. Stafford-Clark, F.R.C.P., **"The Nature of Psychopathic Personality".**

23rd Jan., at 8.30 p.m.: Dr. R. H. Mole, A.E.R.E., Harwell, **"Atomic Energy and Its Hazards".**

13th Feb., at 8.30 p.m.: Victoria Hotel, Torquay, **Clinical Discussion.** Opened by Dr. M. G. Thorne.

13th Mar., at 8.30 p.m.: Dr. Richard Asher, F.R.C.P., **"Face Values".**

24th Apr., at 8.30 p.m.: Arthur Dickson Wright, Esq., M.S., F.R.C.S., **"Some Historical Operations".**

29th May, at 3 p.m.: Hawkmoor Chest Hospital. Annual General Meeting and Summer Meeting. **"Demonstration of Lung Function Tests in relation to Emphysema, Bronchitis and Asthma".**

WEST PENWITH MEDICAL SOCIETY

Sept. 19th: Dr. A. S. Thorley, of Belmont Hospital, Sutton. Films: **"Hypoglycaemic coma in Psychiatry and other subjects".**

Oct. 17th: **Annual Dinner.**

Nov. 21st: **"The Open Laboratory".** West Cornwall Hospital.

19th Dec.: Film. Presented by the British Medical Association.

16th Jan.: H. V. Wingfield, Esq., F.R.C.S., **Symposium on Lung Cancer.**

20th Feb.: **Clinical Meeting.** Members of the Hospital Staff.

20th Mar.: Dr. Mark Hewitt. **"Some Skin Diseases".**

17th Apr.: K. Rostron, Esq., F.R.C.S. **Symposium on Headaches.**

15th May: Dr. Anne Gibson of the South London Hospital for Women. **"A Background to Bacteriology".**

19th June: To be arranged.

17th July: On a Medico-Legal Subject.

Meetings are held at the West Cornwall Hospital, Penzance.

Appointments

UNITED BRISTOL HOSPITALS

July to September, 1957

Name	*Appointment*	*Formerly*
JOLLY, G. F., M.R.C.O.G.	Senior Registrar in Obstetrics and Gynaecology.	Resident Registrar, Southmead Hospital.
WALTERS, G., M.B., CH.B., M.R.C.P.	Senior Registrar in Pathology.	Demonstrator in Pathology, University of Bristol.
DONNISON, MISS A. B., M.B., B.CH.	Registrar in Paediatrics.	R.M.O. (Registrar Grade), Tadworth Court.
COOKSEY, M. W., B.D.S.	Registrar in Dental Surgery.	Resident Dental House Surgeon at St. Bartholomew's Hospital, London.
DRINNAN, A. J., B.D.S.	Registrar in Dental Surgery.	S.H.O., Dental Hospital, Bristol.
ALEXANDER, D. M., MB., CH.B.	Registrar in Radiodiagnosis.	House Surgeon to General Surgical Unit, Bridge of Earn Hospital, Perthshire.
CABLE, R., M.B., CH.B.	Registrar in Radiodiagnosis.	Part-time Registrar, B.R.I.
FARRANT, P. C., M.B., CH.B.	Senior Medical Registrar (Research).	S.H.O. in Medicine, Department of Medicine, B.R.I.

Mr. I. W. Cameron, B.D.S., Dental Registrar, has been appointed Lecturer in Dental Surgery in the University of Bristol.

SOUTH WESTERN REGIONAL HOSPITAL BOARD

BRISTOL

Name	*Appointment*	*Formerly*
BLOTT, KATHLEEN, M.B., CH.B. (BRISTOL), D.A., F.F.A.R.C.S.	Consultant Anaesthetist, Southmead Hospital.	Anaesthetist to the Neurosurgical Unit, Royal Perth Hospital, Perth, Australia.
DILWORTH, MISS N. M., M.B., B.S. (ADELAIDE).	Anaesthetic Registrar, Southmead Hospital.	Locum Anaesthetic Registrar, Frenchay Hospital.
THOMAS, N. S., M.B., B.S. (LONDON).	Anaesthetic Registrar, Frenchay Hospital.	S.H.O. Anaesthetist, Frenchay Hospital.
TODD, C., L.R.C.P., M.R.C.S., D.A.	G.P. Anaesthetist, Weston-super-Mare General Hospital.	Locum Tenens Anaesthetist, Weston-super-Mare Hospital.
BIRD, M. W., M.R.C.S., L.R.C.P., D.O.M.S.	Clinical Assistant in Ophthalmology, Wells and District Hospital.	Is a registered Ophthalmic Medical Practitioner under Supplementary Scheme.
EASTHAM, R. D., B.A., M.D. (CAMBRIDGE), D.C.P. (LONDON), Diploma of Pathology (London).	Consultant Pathologist, Frenchay Hospital.	Consultant Pathologist, Newcastle General Hospital, in charge of Medical Biochemistry.
FOSTER, A. R., B.SC. (LEEDS), M.B., CH.B. (LEEDS).	Registrar, Bristol Mental Hospitals.	S.H.O., Bristol Mental Hospitals.

NORTH GLOUCESTERSHIRE

OWEN, K. LLOYD, M.R.C.S., L.R.C.P., F.F.A.R.C.S.	Consultant Anaesthetist, North Gloucestershire Clinical Area.	Senior Anaesthetic Registrar, Cardiff Royal Infirmary.

BATH

MURPHY, P., M.B., B.CH., N.U.I., D.A.	Anaesthetic Registrar, Bath Group of Hospitals.	Locum Anaesthetic Registrar, Bath Group of Hospitals.
BROTMACHER, L., M.R.C.P., (LONDON), M.D. (LONDON), PH.D. (LONDON).	Senior Medical Registrar, Royal United Hospital, Bath.	Research Fellow, Guy's Hospital.
KILPATRICK, MISS L., M.B., CH.B. (EDIN.).	Registrar in Obstetrics and Gynaecology, Bath Group of Hospitals.	S.H.O. in Surgery and Gynaecology, Queen Mary's Hospital, Sidcup.

DEVON AND CORNWALL

KENDALL, J. G., M.B., CH.B. (B'HAM), F.R.C.S. (ENGLAND).	Consultant Orthopaedic Surgeon, West Cornwall Clinical Area.	Senior Registrar, The Prince of Wales Orthopaedic Hospital, Cardiff.
PARKER, JOHN, M.A., M.B., B.CHIR (CANTAB), M.R.C.P. (LONDON).	Re-appointed for further year as Clinical Assistant in Paediatrics in Torquay (Torbay and Rosehill Children's Hospitals).	Is in general practice, Torquay
COUPER, L., M.B., CH.B. (GLASGOW), D.P.M. (MANCHESTER).	Medical Superintendent, Digby-Wonford Hospital, Exeter.	Consultant Psychiatrist and Deputy Superintendent, Winwick Hospital, Nr. Warrington.
PRICE, J. H., M.B., B.S. (LONDON), D.P.M. (LONDON) PT. I.	Senior Psychiatric Registrar, Moorhaven Hospital, Ivybridge.	Psychiatric Registrar, Hill End Hospital, St. Albans.

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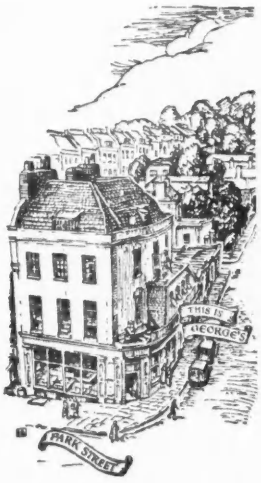

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